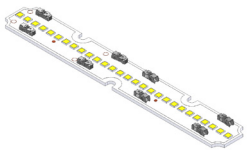
ADVANCE by signify

LED Modules

Fortimo LED Strip Performance FlexTune LV5

5.5in 550lm



Fortimo LED strip performance FlexTune LV5 modules are the preferred light source for the Advance FlexTune system; which provides new level of design flexibility, control precision, and simplicity in tunable white lighting systems for commerical office, healthcare, hospitality, and education applications.

Fortimo LED strip performance FlexTune LV5 modules comes with a multitude of performance and product advancements that include higher efficacy, higher lumen output, increased lumen maintenance, additional mechanical designs when compared to the the previous generation (LV4). The modules also feature connectors at both ends to enable daisy chaining, and a high (>8kV) ESD rating for easy handling.

Commercial Product Name	12NC
FO Strip PR FT 5.5in 550lm 827-865 LV5	929001764413

Features

- Pairs with Advance Xitanium SR FlexTune LED driver to provide: digital wireless control designed to provide precise CCT tuning and dimming control from 2700-6500K
- 3 SDCM color consistency
- 5.5in, 11in, 22in, 23.7 in. options
- (TM21) of L90 36,000 hours
- Connectors at both ends and tight Vf binning
- High Flux density of up to 2000lm/ft
- Narrow width of 20mm

Benefits

- Enables digital tuning of color temperature for tuneable white applications
- High energy efficacy and long lifetime[1]
- Low total cost of ownership
- Slim width and varied lengths provide excellent design flexibility
- 5-year limited system warranty with Advance Xitanium LED drivers[2]
- Specifications enable DLC Premium category[3]

Applications

- Retail
- Hospitality
- Office
- Education

1. Average rated life is based one engineering data testing and probability analysis. The hours are at the B50, L70 point – 50,000 hours life with 70% lumen maintenance at Tc point.
2. View limited warranty at www.signify.com/warranties for details and restrictions.
3. Fortimo LED strip LV5 is not a DesignLights Consortium™ (DLC) qualified product. It is an OEM component that meets certain performance specifications that are geared toward meeting DLC Standard Tier (v4.0) in a fully assembled fixture. The customer is liable for proper design, manufacturing, testing and qualification according to DLC requirements.

Fortimo LED Strip Performance FlexTune LV5
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Drive Currents

Paramter at I_{life}	Nominal*	Life**	Max***	Unit
FO Strip PR FT 5.5in 550lm 8xx LV5	**77**	163	175	mA

Module Temperatures

Paramter at I_{life}	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	**45**	85	95	°C

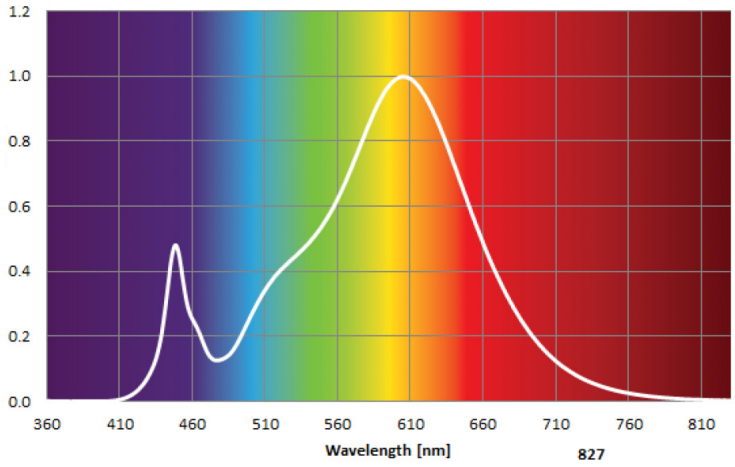
* Nominal value at which typical performance is specified.
** Value at which life time is specified.
*** Maximum value for safe operation, do not operate above this value.

Optical Characteristics – Table per CCT

FO Strip PR FT 5.5in 550lm 827 LV5

Parameter	Min. (@ Inom)	Typ. (@ Inom)	Max. (@ Inom)	Unit
Luminous Flux	470	510	550	Lm
Module Efficiency	149	165	182	Lm/W
Correlated Color Temperature (CCT) Target		2700		K
Color coordinates (CIEx, CIEy)		(0.457, 0.408)		-
Color consistency			3	SDCM
CRI	80			-

Operation point	Tc	Im	Im/W
40 mA	45 °C	270	176
	70 °C	260	170
	95 °C	250	163
163 mA	45 °C	1020	145
	70 °C	970	140
	95 °C	920	133
175 mA	45 °C	1080	142
	70 °C	1040	137
	95 °C	980	131



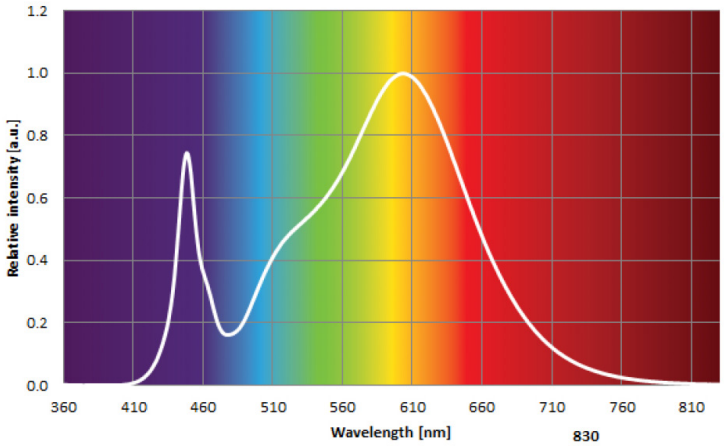
R9>0, Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Fortimo LED Strip Performance FlexTune LV5
5.5in 550lm

Optical Characteristics – Table per CCT

FO Strip PR FT 5.5in 550lm 830 LV5				
Parameter	**Min. (@ Inom)**	**Typ. (@ Inom)**	**Max. (@ Inom)**	**Unit**
Luminous Flux	470	510	550	Lm
Module Efficiency	151	168	185	Lm/W
Correlated Color Temperature (CCT) Target		3000		K

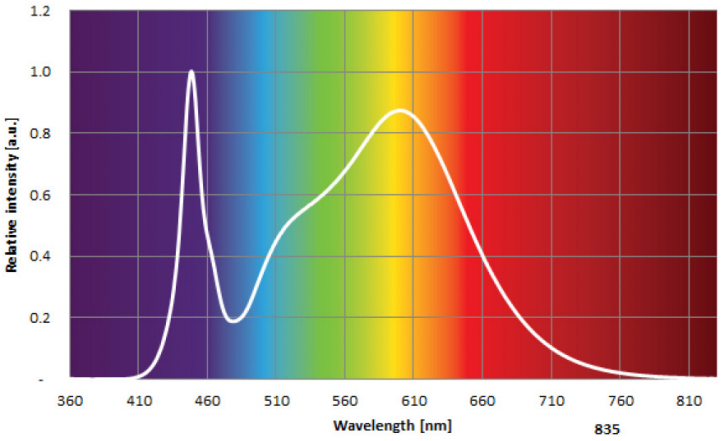
Operation point	Tc	Im	Im/W
40 mA	45 °C	270	177
	70 °C	260	172
	95 °C	250	168
163 mA	45 °C	1020	148
	70 °C	970	142
	95 °C	920	135
175 mA	45 °C	1080	144
	70 °C	1040	140
	95 °C	980	133



Using the Advance Xitanium SR Flextune LED driver, set to constant light output. R9>0, Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

FO Strip PR FT 5.5in 550lm 835 LV5				
Parameter	**Min. (@ Inom)**	**Typ. (@ Inom)**	**Max. (@ Inom)**	**Unit**
Luminous Flux	470	510	550	Lm
Module Efficiency	153	170	187	Lm/W
Correlated Color Temperature (CCT) Target		3500		K

Operation point	Tc	Im	Im/W
40 mA	45 °C	270	179
	70 °C	260	175
	95 °C	250	170
163 mA	45 °C	1020	150
	70 °C	970	144
	95 °C	920	137
175 mA	45 °C	1080	147
	70 °C	1040	142
	95 °C	980	135



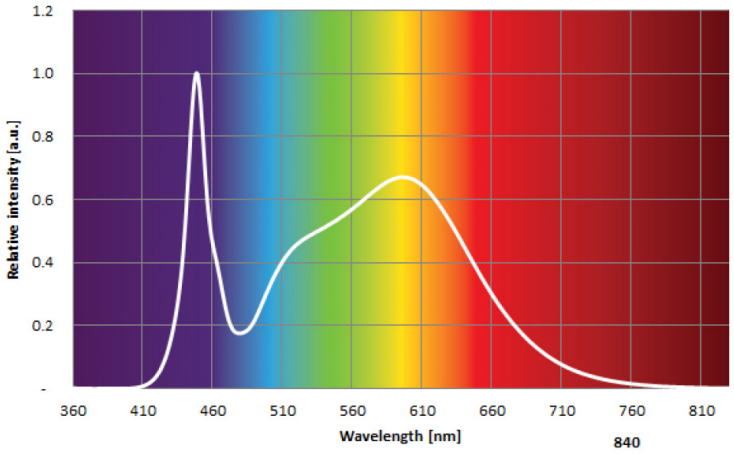
Using the Advance Xitanium SR Flextune LED driver, set to constant light output. R9>0, Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Fortimo LED Strip Performance FlexTune LV5
5.5in 550lm

Optical Characteristics – Table per CCT

FO Strip PR FT 5.5in 550lm 840 LV5				
Parameter	**Min. (@ Inom)**	**Typ. (@ Inom)**	**Max. (@ Inom)**	**Unit**
Luminous Flux	470	510	550	Lm
Module Efficiency	155	172	189	Lm/W
Correlated Color Temperature (CCT) Target		4000		K

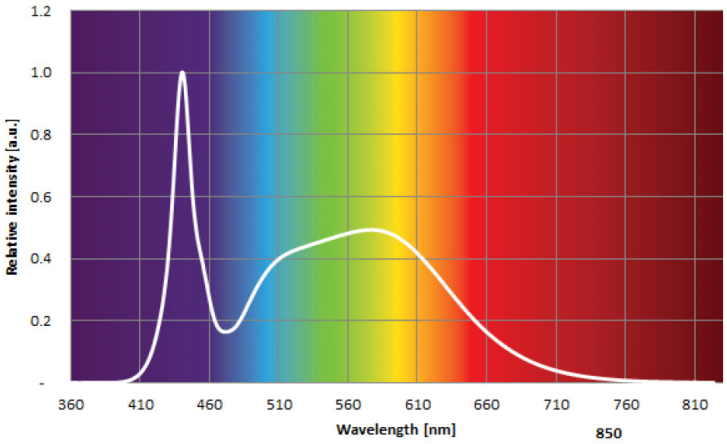
Operation point	Tc	Im	Im/W
40 mA	45 °C	270	181
	70 °C	260	177
	95 °C	250	172
163 mA	45 °C	1020	152
	70 °C	970	145
	95 °C	920	139
175 mA	45 °C	1080	148
	70 °C	1040	144
	95 °C	980	137



Using the Advance Xitanium SR Flextune LED driver, set to constant light output. R9>0, Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

FO Strip PR FT 5.5in 550lm 850 LV5				
Parameter	**Min. (@ Inom)**	**Typ. (@ Inom)**	**Max. (@ Inom)**	**Unit**
Luminous Flux	470	510	550	Lm
Module Efficiency	158	175	183	Lm/W
Correlated Color Temperature (CCT) Target		5000		K

Operation point	Tc	Im	Im/W
40 mA	45 °C	270	184
	70 °C	260	180
	95 °C	250	175
163 mA	45 °C	1020	154
	70 °C	970	148
	95 °C	920	141
175 mA	45 °C	1080	151
	70 °C	1040	146
	95 °C	980	139

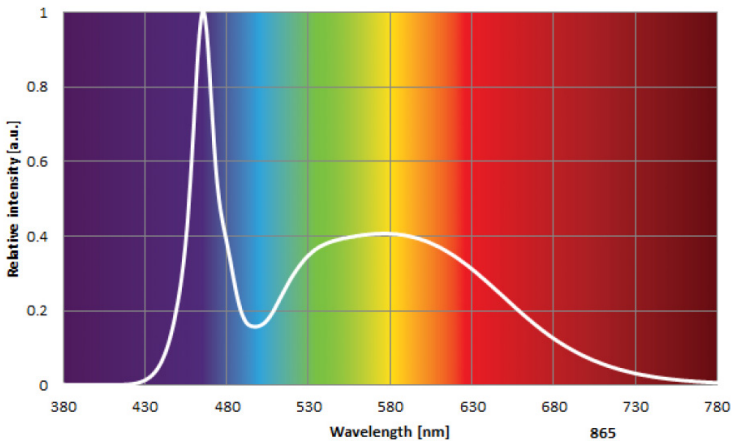


Fortimo LED Strip Performance FlexTune LV5
5.5in 550lm

Optical Characteristics – Table per CCT

FO Strip PR FT 5.5in 550lm 865 LV5				
Parameter	**Min. (@ Inom)**	**Typ. (@ Inom)**	**Max. (@ Inom)**	**Unit**
Luminous Flux	510	550	590	Lm
Module Efficiency	162	180	198	Lm/W
Correlated Color Temperature (CCT) Target		6500		K
Color coordinates (CIEx, CIEy)		(0.312, 0.325)		-
Color consistency			3	SDCM
CRI	80			-

Operation point	Tc	Im	Im/W
40 mA	45 °C	290	192
	70 °C	280	186
	95 °C	270	178
163 mA	45 °C	1100	158
	70 °C	1020	152
	95 °C	990	145
175 mA	45 °C	1170	155
	70 °C	1120	150
	95 °C	1060	143



R9>0, Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Fortimo LED Strip Performance FlexTune LV5 5.5in 550lm

Absolute Ratings

Parameter	Min.	Typ.	Max.	Unit
Current through the LED module (I-max)			175	mA
Working voltage			44	V_{dc}
Isolation breakdown voltage	700			V_{dc}
Ambient Temperature	-20[4]			°C

4. There cannot be any ice/fog/mist on any part of the module surface during the application at -20°C.

System Chain Limits for Same Length Modules

Total length (in)	Total current limit (A)
48	0.9
72	0.6
96	0.44

Please review the design-in guide or contact the Design-in team for further information.

Application Information

Compliance and Approval

UL & cUL - UL8750

Environmental

RoHS / REACH

IP Rating	No IP rating
Overheating Protection	No protection
Luminaire Class	UL Class 2

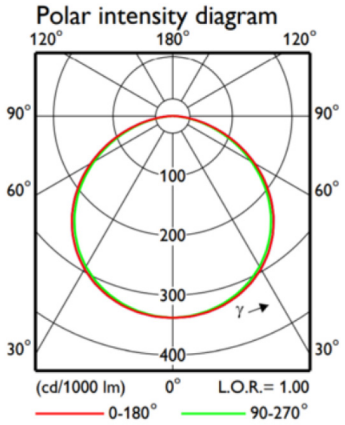
Estimated Number of Full Thermal Product Cycles @ 25°C Ambient Temperature

Case Temperature Tc [°C]	Amount of Cycles
45	100,000
55	100,000
65	100,000
75	65,000
85	25,000

Fortimo LED Strip Performance FlexTune LV5
5.5in 550lm

Beam Shape

The Fortimo LED strip generates a Lambertian beam shape, which is a pragmatic starting point for OEMs wishing to design secondary optics.



Electrical Characteristics

Parameter	Min	Typ	Max	Unit
Forward voltage; If = 77mA, Tc = 45°C	39.4	39.9	40.4	V
Thermal power; If = 77mA, Tc = 45°C		1.5		W

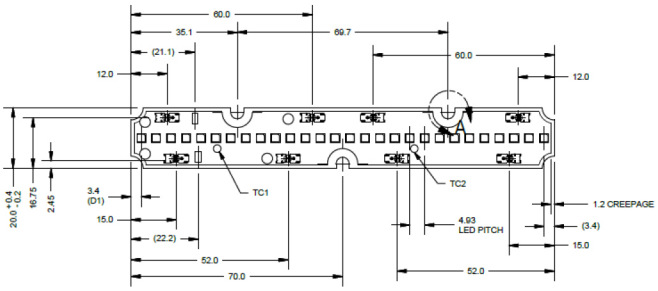
Wiring

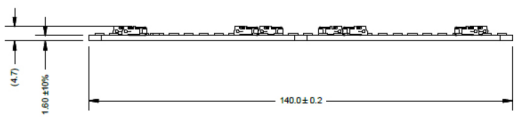
Specification Item	Value	Unit	Condition
Input Wire Cross-Section	0.2...0.8	mm^2	Solid
	18...24	AWG	
	0.45...0.7	mm^2	Stranded
	20...22	AWG	
Input Wire Strip Length	4.5...5.5	mm	

Mechanical Characteristics

Specification Item	Min	Typ	Max	Unit
Length	139.8	140.0	140.2	mm
Width	19.8	20.0	20.4	mm
Height Excl. Connector		2.3		mm
Height Incl. Connector		6.3		mm
Warpage			0.75	%

FO Strip PR FT 5.5in 550lm xxx LV5





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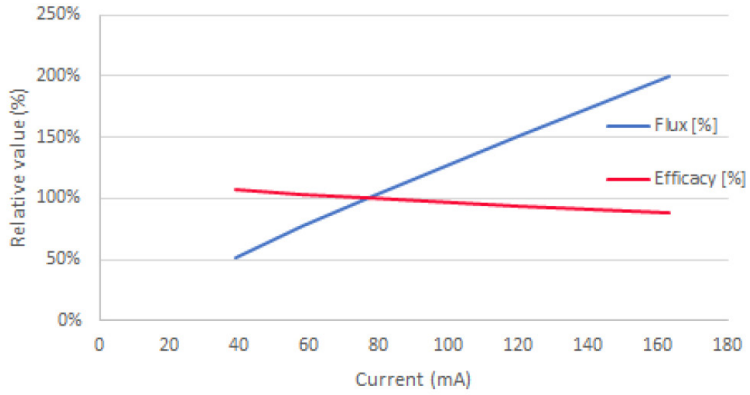
5.5in 550lm

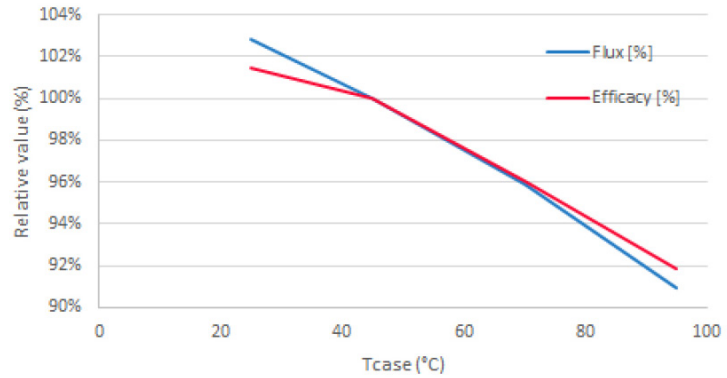
Tuning Information

Flux and Efficacy Vs. Current (at Nominal Temperature)



I [mA]	Flux [%]	Efficacy [%]
39	52%	107%
58	77%	103%
77	100%	100%
120	151%	94%
163	200%	88%

Flux and Efficacy Vs. Tc



Tc [°C]	Flux [%]	Efficacy [%]
95	91%	92%
70	96%	97%
45	100%	100%
25	103%	102%

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Lumen Maintenance Based on Theoretical TM21 Calculations

Operation point	Tc	L70	L80	L90
80% I-nom 62 mA	Tc-nom 45 °C	>50	>50	50
	Tc 70 °C	>50	>50	47
	Tc-life 95 °C	>50	>50	41
I-nom 77 mA	Tc-nom 45 °C	>50	>50	50
	Tc 70 °C	>50	>50	47
	Tc-life 95 °C	>50	>50	41
I-life 163 mA	Tc-nom 45 °C	>50	>50	50
	Tc 70 °C	>50	>50	47
	Tc-life 95 °C	>50	>50	41

Application limited to indoor applications (office/hospitality/educational), indoor warehouse and light industry.

The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract.

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